

Figure 1 - ExpressNet Overview

Packages

Package content is not restricted by the delivery mechanisms in any way. However, before the Delivery Server forwards a package, it will guarantee the contents of the package are complete and any value-added services have been performed. Likewise, a package will not be made available to a client until its receipt is complete. The packaging tools we provided will dictate what is required in a package. For example, a packaging tool for a radio-spot producer will require a package contain one or more audio spots, an address list, and traffic instructions before the server will forward the package.

All packages require a client address list before the server can deliver them. This is true whether the producer provides the address list manually, or whether Musicam Express provides a Value-added service of address entry from a hard-copy address list. Producers that address their own packages will have tools and address books to do so.

For the Musicam Express business, the package media includes: one or more 30 or 60 second audio spots, a faxable traffic instructions list, P/O references, and an address list.

Exhibit A

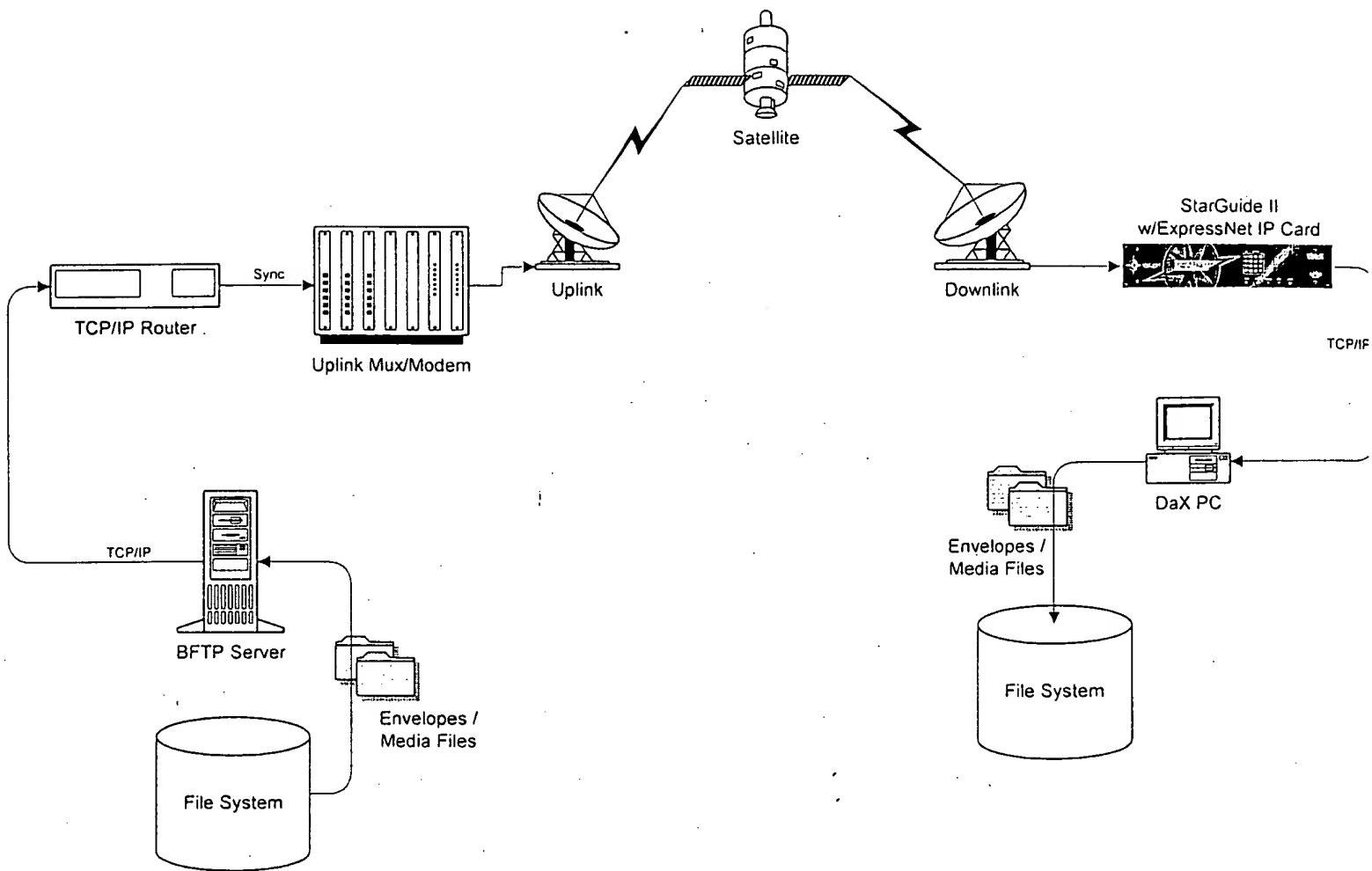


Exhibit B

Model

The model we use for ExpressNet is a combination of "electronic Fed-X" and e-mail. Like with Fed-X, media is packaged, labeled and dropped off for shipment. These packages and their delivery status are well tracked and billed to an account. However, like e-mail, clients automatically and periodically call into a local or central delivery server to fetch their deliveries. This is called a "pull model" because the client decides, based upon what it needs but does not yet have, what material to actively fetch. There is a mechanism for the delivery server to notify clients that they need to call in, but the client always initiates the call-in and fetch.

We use e-mail as a generic messaging transport because of its reliability and its passive access. Specifically, the server just needs to submit its information to its outbox, and the e-mail system will let it flow through the network to the client's inbox. Still, e-mail lacks the bandwidth to handle large, binary media files. Thus, we use FTP and satellite delivery to distribute the package contents. A summary the terrestrial delivery model is: Packing lists are e-mailed to the clients, while package contents are fetched by the client using FTP.

Data Flow Overview

There are three types of data flowing through the system: packages, confirmations, and address-books. There are three methods of transport: e-mail, File-Transfer-Protocol (FTP), and File-Broadcast-Protocol (FBP).

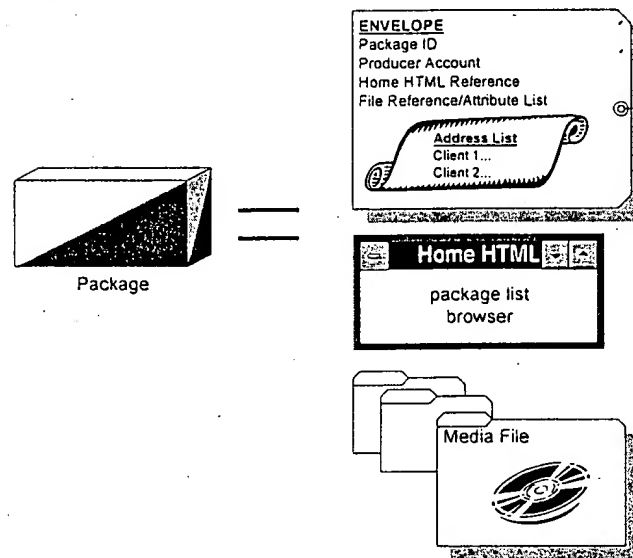


Figure 2 - Package Content

Envelope

Of the data flowing through the system, a package is a high level abstraction for the producer and the client. To the delivery system, a package is an association of an envelope and the files referenced in that envelope. An envelope is an ASCII formatted text-file containing, among other things, identification, a file list, and an address list. Envelopes are small package headers that are replicated and delivered through the network through e-mail (SMTP and POP3 protocols). When a client receives an envelope, it checks the file list contained therein and downloads over ISDN all files it does not yet have. The client uses FTP to achieve this download. Where there is a satellite component, the server will broadcast out the files and envelopes, too. This way, a client can process and receive envelopes and files over this high-

bandwidth one-way link. When a background client agent dials in and loads the envelopes addressed to it, it will discard envelopes already processed, and will FTP download any files it requires that have not been received by satellite.

File Broadcast Protocol

FBP is a protocol used over the satellite to send files. Unlike FTP, FBP sends a file without assuming responses or acknowledgments are returned. This is a proprietary protocol, as no industry standard broadcast protocol exists. Refer to *File Broadcast Protocol Specification*.

Data Flow

Data will flow through the system, from production to consumption, as follows:

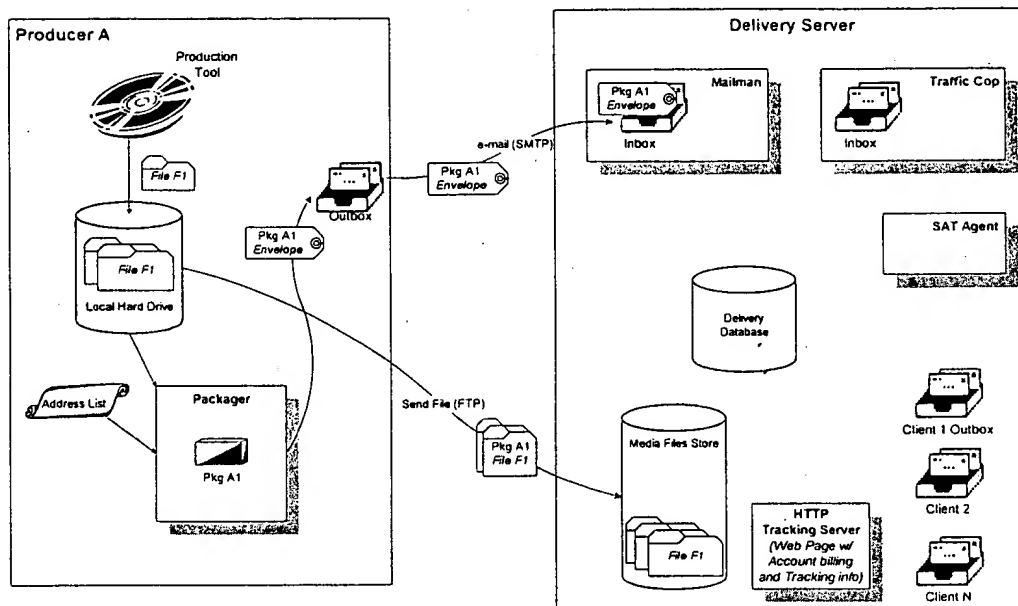


Figure 3 - Data Flow: Production and Submission

Step 1: Production A producer begins by recording his media. For radio-spot delivery, the media will be ISCID identified audio cuts. Third-party production tools can be used for this production. ExpressNet will also provide simple authoring tools as needed (e.g. Audio recorder, Video Capture, etc.).

Step 2: Packaging As per their contract, a producer then builds a package of media spots. The "Packager" will have different requirements as to what completes a package (traffic instructions, audio spots, etc.) Content requirements (if any) are based upon the type of package.

Step 3: Addressing The package can next be addressed. Addressing may take place after submission, but the Delivery Server will not forward it until it has been addressed. The producer will be presented a list of unique client names from both a "global" address list and a "private" list. The global address list is read-only and updated from the server. Both lists group the clients. The "private" list may be modified and saved. Clients from the private list that are not on the global list will be drop-ship mailed and will not be

available for express priority delivery. Both the media content list and client address list will preserve sort order when billed and tracked.

Step 4: Submission The Packager application will have a "send" key that will queue the package for immediate submission. The producer's "Submitting Agent" will then take over. For all queued packages, it calls into the server via ISDN and FTP's all files for the package to the server, and then e-mails the envelope for that package to the server (not to the clients).

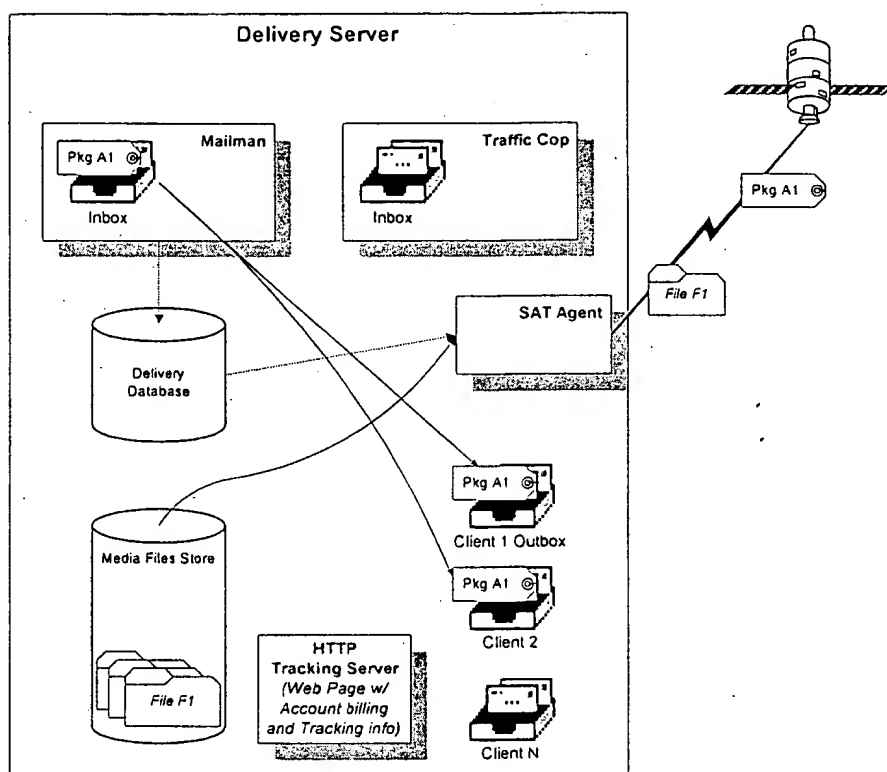
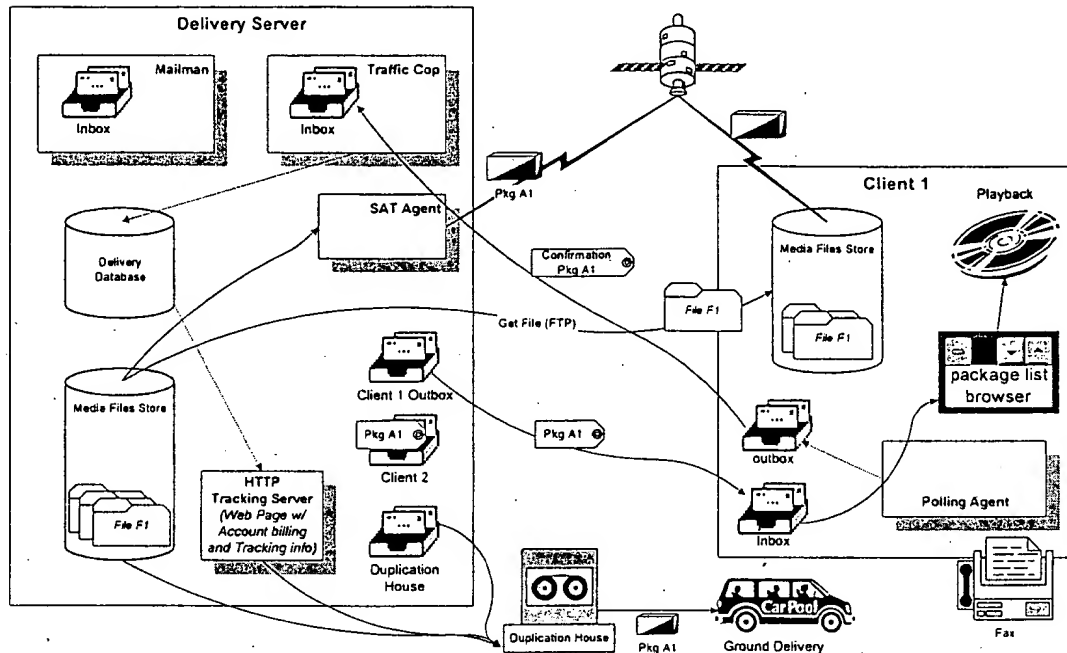


Figure 4 - Data Flow: Server Forwarding

Step 5: Forwarding The server has an agent called the "mailman" that scans its inbox for envelope submissions. On receiving an envelope, the mailman validates that all the files referenced therein have been FTP'd to it. If so, the mailman will e-mail the envelope (not the files) to all of the clients addressed in that envelope. It also submits the envelope to the Satellite Agent which queues the package (envelope and its referenced content) for repeated broadcasting over the satellite.

Step 6: Confirming Packages The server also has a "Traffic Cop" that monitors its inbox for confirmations to packages sent by clients. A confirmation from a client indicates it has completely received a package (envelope and all media files referenced therein), much like "registered mail". On receiving a confirmation, the server update its database with the confirmed delivery. A duplication house can record and ground ship packages to clients that have not confirmed their delivery by a required time, and to clients that do not support electronic delivery.

Step 7: *Satellite Delivery* Through the File-Broadcast-Protocol, the client will receive envelopes and media files over the satellite. Satellite addressing modes will assure that envelopes and media files are only broadcast to the clients for which they are addressed. Clients may therefore blindly save new files for processing by another agent.



Figure

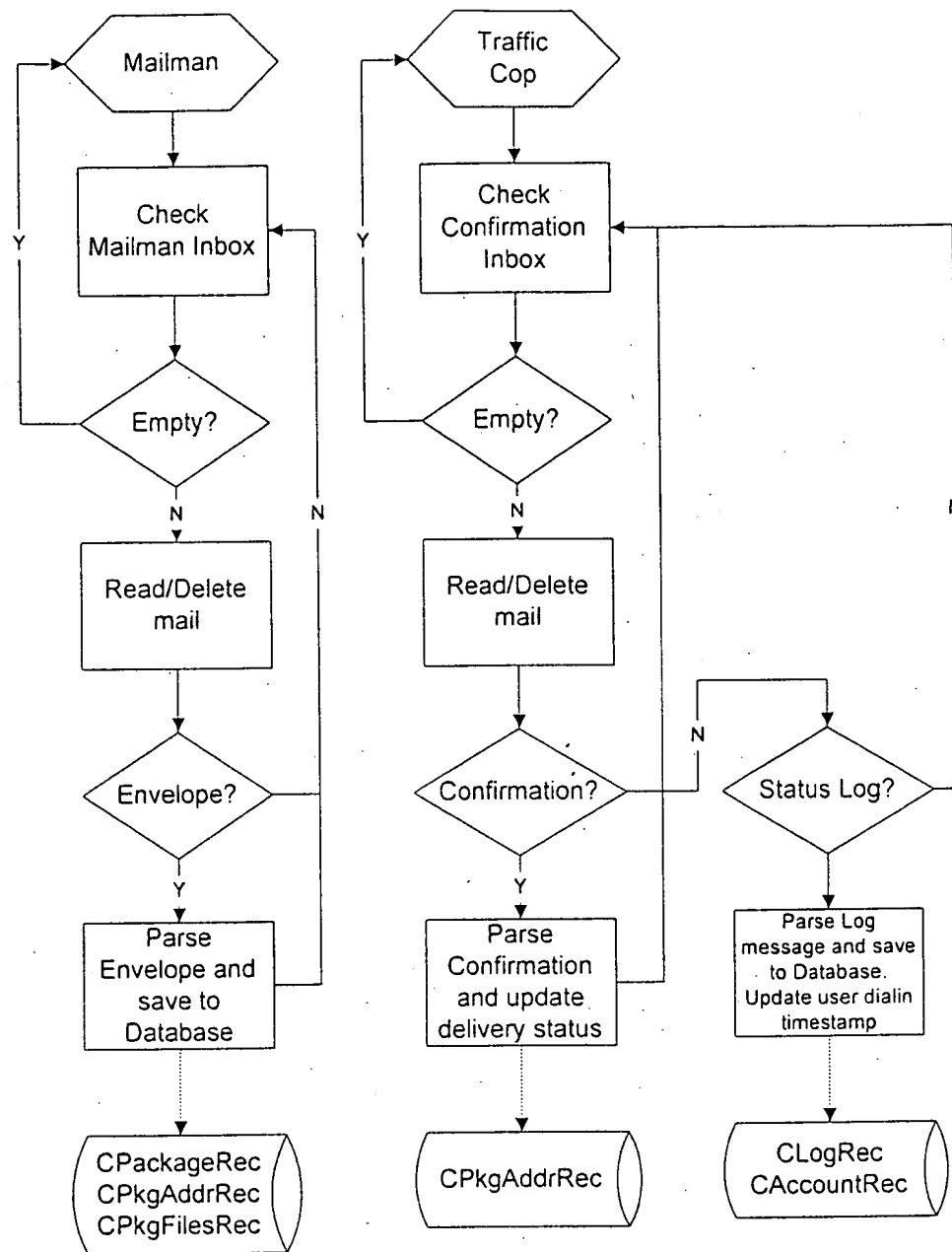
5 - Data Flow: Delivery

Step 8: *Client Polling* Periodically, the client will call into the local or central delivery server to fetch its e-mail. The call cycle is scheduled by the server, and may also be triggered by a “tickle”. Tickling allows the server to notify clients that packages are available for them to dial in and pick up. This notification occurs by ringing the client over the POTS or ISDN. Because the client does not answer, tickling incurs no economic cost.

Step 9: *Processing Envelopes* After exchanging messages with the server, the client checks its inbox for newly arrived envelopes. If a package has already been received, it discards the envelope. Any file not already received, the agent will FTP it from the server.

Step 10: *Confirming Packages* Whether from satellite or from terrestrial FTP, whenever the contents of an envelope are completely received, the client will take two actions: 1) it will e-mail a confirmation of that package back to the central delivery server, and 2) it will flag the package, with its home-HTML, so the client's display browser may access it.

Step 11: Viewing a Package The client's user interface will be browser based. That is, like Microsoft Internet Explorer, it will have a package hierarchy, inbox, trash bin, and will utilize HTML for its packing lists so that media can be conveniently previewed (See *ExpressNet Client Interface Specification*).

**Flow Chart**

The process below is the heart of the MailRoom application. It processes and forwards the envelopes and confirmations saved into the central database by the Mailman and Traffic Cop. It decides when and where to forward packages.

Exhibit G

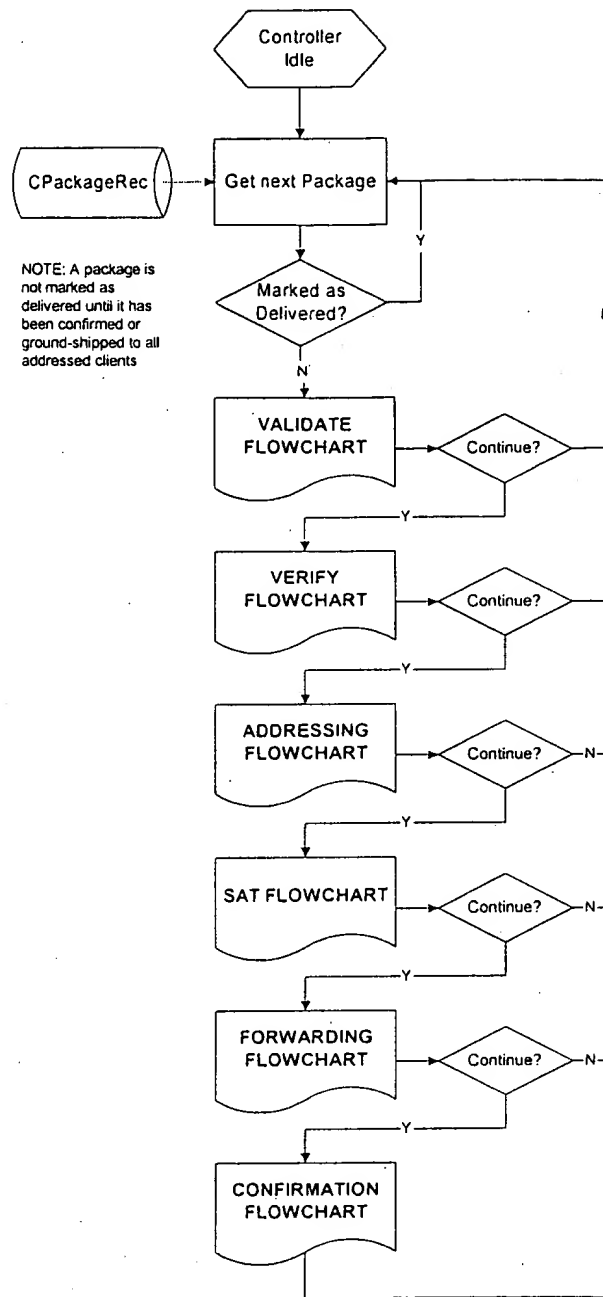


Exhibit H

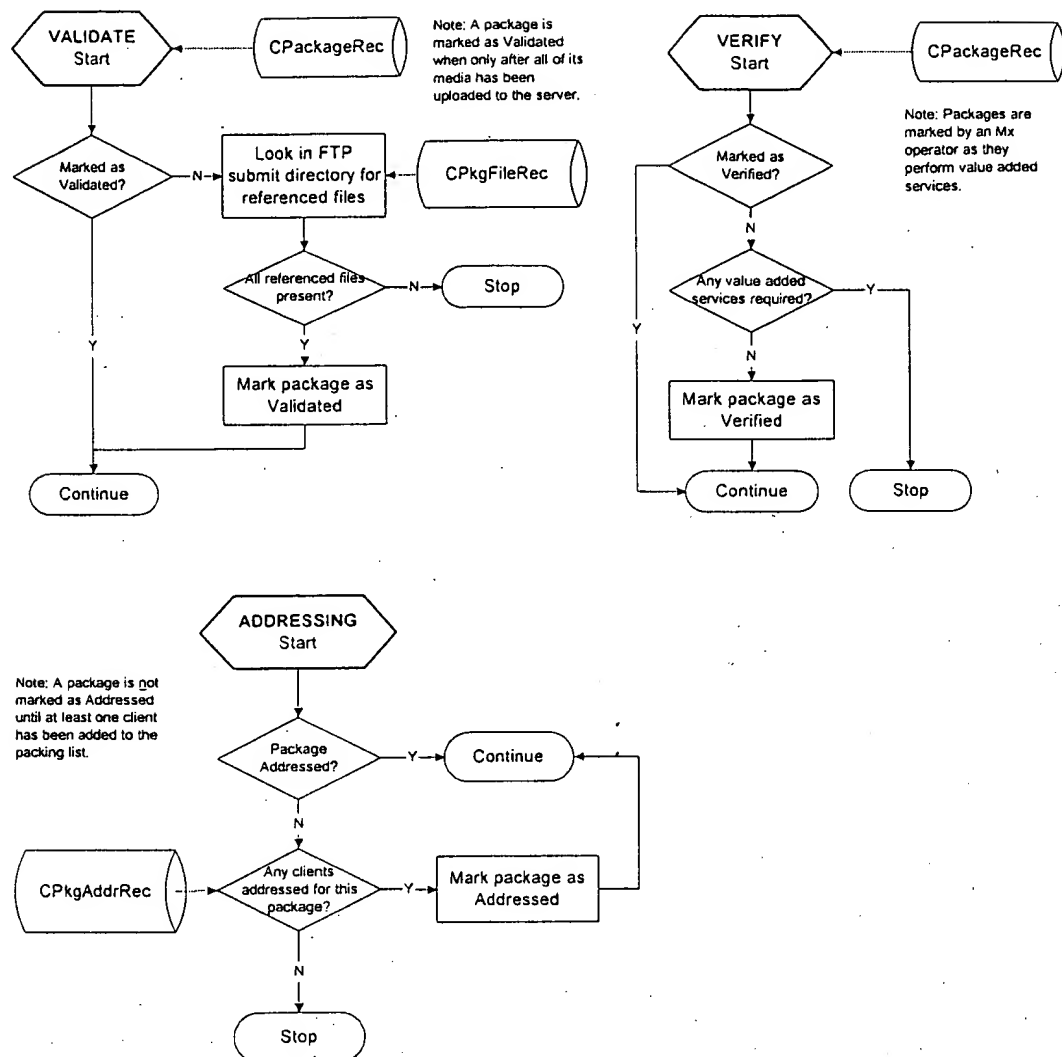


Exhibit I

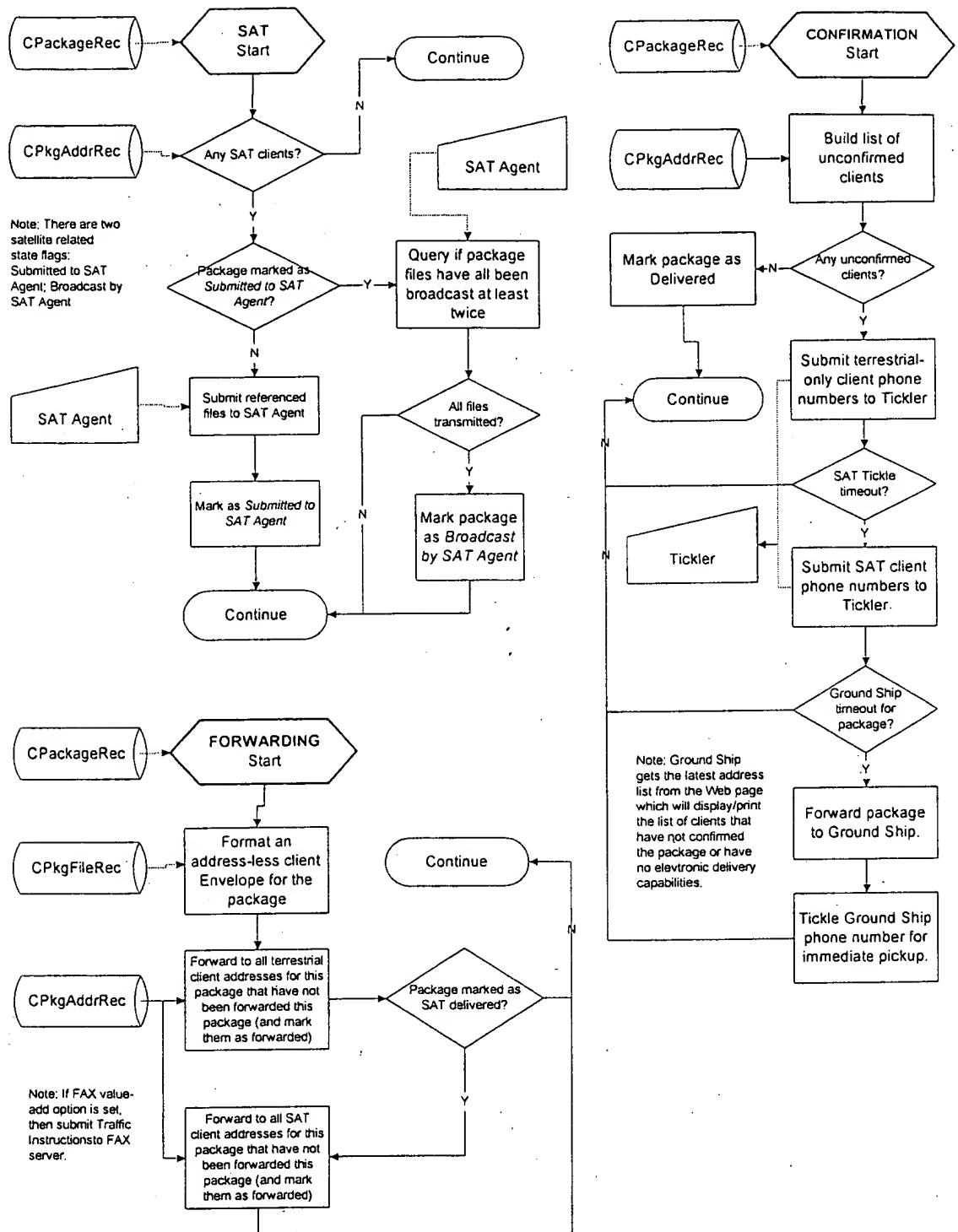


Exhibit J